

*Attorney Docket No.: P16019**Patent Appl No: 10,735,122***Amendments to the Claims:**

The following listing of the claims is provided in accordance with 37 C.F.R.

1.121:

1. (Currently amended) A method to seal a porous dielectric comprising:
exposing the porous dielectric material that comprises reactive groups adjacent a surface of the material to a coupling agent comprising phosgene; and
wherein the coupling agent reacts with the reactive groups adjacent the surface of the porous dielectric material to form coupling structures linked to the dielectric material, and further wherein the coupling structures are exposed to a sealing agent comprising a crosslinking agent, wherein the crosslinking agent comprises a multifunctional alcohol.

Claims 2-11 (Canceled).

12. (Currently amended) A method to seal a pore in a dielectric material structure comprising:

introducing a silane coupling reagent comprising a thiol end cap and at least one alkoxy side group reactive to SiOH at the surface of a pore, wherein the at least one alkoxy side group reacts with SiOH at the surface of the pore to form coupling structures linked to the pore;

introducing an oxidizing agent to ~~facilitate formation of~~ form disulfide bonds between adjacent oxidized thiol end caps, and wherein a silicon atom of the coupling reagent is coupled to a sulfur atom of the thiol end cap ~~endcap~~, and a flexible chain is between the silicon atom and the sulfur atom, wherein the flexible chain comprises a portion of a bridge

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structure that is capable of sealing the pore, wherein the bridge structure is disposed across the opening of the pore.

13. (Currently amended) The method of claim 12 wherein ~~the silane coupling agent comprises a silicon atom, and wherein the thiol end cap is coupled to the silicon atom by~~ the flexible chain comprises a substantially long chain of CH₂ groups.

14. (Currently amended) The method of claim 13 wherein the ~~flexible substantially long chain of CH₂ groups comprises the thiol end cap is coupled to the silicon atom by~~ at least 4 CH₂ groups.

15. (Currently amended) The method of claim 12 wherein the at least one alkoxy side group is selected from the group consisting of ~~OCH₃~~, O-ethyl, O-methyl, O-tertbutyl, and O-isopropyl.

16. (Currently amended) The method of claim 14 wherein the silane coupling reagent comprises three ~~OCH₃~~ O-methyl side groups.

17. (Original) The method of claim 12 wherein the oxidizing agent comprises formaldehyde.

Claims 18-24 (Canceled).

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25. (Currently amended) A method to seal an exposed pore in a dielectric material comprising:

exposing the exposed pore to a at least one coupling agent;

forming links coupling the at least one coupling agent to a surface of the pore;

exposing the ~~exposed pore and the~~ at least one coupling agent linked to the surface of the pore to an oxidizing agent; and

forming disulfide bonds between adjacent ones of the at least one coupling agent that are linked to the surface of the pore to form a ~~forming a barrier across the pore;~~

~~wherein the barrier comprises a barrier molecule comprising a silicon atom coupled to a surface of the pore, a sulfur atom, and a flexible chain between the silicon atom and the sulfur atom, wherein the flexible chain comprises a portion of a bridge structure that is capable of sealing the pore, and wherein the bridge structure that is disposed across the opening of the exposed pore.~~

26. (Canceled)

27. (Currently amended) The method of claim ~~26~~ 25 wherein ~~forming a barrier across the pore comprises forming a~~ the disulfide bonds are is-formed between a sulfur atom in an ~~the~~ end cap of a first ~~barrier molecule~~ coupling agent and a sulfur atom in an ~~the~~ end cap of a second coupling agent ~~barrier molecule~~.

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28. (Currently amended) The method of claim ~~26~~ 25 wherein the at least one coupling agent comprises a flexible chain comprising ~~comprises~~ a substantially long chain of CH₂ groups.

29. (Currently amended) The method of claim 28 wherein the substantially long chain of CH₂ molecules comprises at least four CH₂ groups.

30. (Currently amended) The method of claim 25 ~~26~~ wherein the at least one surface-coupling group agent comprises an O-methyl OCH₃ group.

31. (Original) The method of claim 25 wherein the oxidizing agent comprises formaldehyde.